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मानक

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“जानने का अधिकार, जीने का अधिकार”

Mazdoor Kisan Shakti Sangathan

“The Right to Information, The Right to Live”

“पुराने को छोड़ नये के तरफ”

Jawaharlal Nehru

“Step Out From the Old to the New”

IS 11455-1-2 (1986): Outline dimensions of transformers and inductors for use in telecommunication and electronic equipment, Part 1: Transformers, Inductors using YEI-1 Laminations, Section 2: U-clamp mounting [LITD 5: Semiconductor and Other Electronic Components and Devices]



“ज्ञान से एक नये भारत का निर्माण”

Satyanarayan Gangaram Pitroda

“Invent a New India Using Knowledge”



“ज्ञान एक ऐसा खजाना है जो कभी चुराया नहीं जा सकता है”

Bhartrhari—Nitiśatakam

“Knowledge is such a treasure which cannot be stolen”

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Indian Standard

OUTLINE DIMENSIONS OF TRANSFORMERS AND
INDUCTORS FOR USE IN TELECOMMUNICATION
AND ELECTRONIC EQUIPMENT

PART 1 TRANSFORMERS AND INDUCTORS USING
YEI-1 LAMINATIONS

Section 2 U-Clamp Mounting

1. **Scope** — Specifies the outline dimensions of transformers and inductors, using E&I laminations, built for, U-clamp mounting.
2. **Laminations** — For the purpose of this specification, the laminations shall conform with the dimensions of Type YEI-1, as given in relevant Indian Standard.
3. **General** — The styles and mounting methods are based upon proven methods of assembly. In particular, the dimensions specified permit the compliance, in respect of creepage and clearance distances, with IS:616-1981 'Safety requirements for mains operated electronic and related apparatus for household and similar general use (*first revision*)', by means of 'safety type' coil formers.

On the larger sizes of laminations, a range of stack heights allows continuous variation of power rating. The increment of stack height follows the R10 series of preferred numbers [see IS : 1067 - 1907 Preferred numbers (*first revision*)] as a multiple of the width of the centre limb of the laminations. The stack height is shown as nominal and is open to small variations within the proposed outline dimension and fixing centres. A suffix is used to designate the appropriate stock size as shown below:

Suffix Letter	Multiple of Centre Leg of Lamination
a	0.5
b	0.63
c	0.8
d	1.0 (that is, square stack)
e	1.25
f	1.6
g	2.0

The data provided in 4 gives the dimensions of:

Overall dimensions	(E, B, C)
Positioning of mounting holes	(D)
Fixing hole size	(G)
Stack size	(S)

3.1 **Tolerances** — The dimensions, except where indicated as maximum or nominal shall have tolerances in accordance with the requirements of IS : 919 (Part 1)-1983 Recommendations for limits and fits for engineering : Part 1 General engineering (*first revision*)'. The appropriate tolerance is shown at the head of each column of dimensions in Table 1 and 2.

4. **Dimensions** — The dimensions specified in Table 1 and 2 correspond to assemblies using laminations YEI 1-10 to YEI 1-25 in accordance with the outline drawings in Fig. 1 and 2 respectively.

The magnetic axis may be vertical or horizontal.

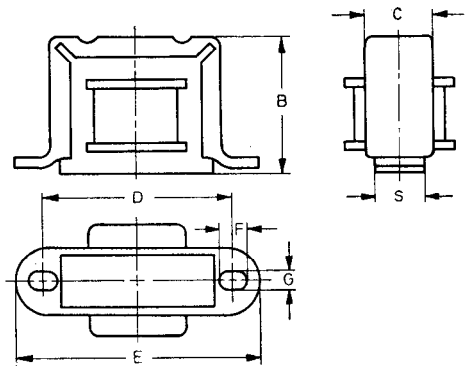


FIG. 1 U-CLAMP MOUNTING (BOBBIN IN HORIZONTAL ORIENTATION)

TABLE 1 U-CLAMP MOUNTING STYLE (BOBBIN IN HORIZONTAL ORIENTATION)

(Clause 4)

All dimensions in millimetres.

Code Designation	S_{nom}	B_{max}	C_{max}	$D_{\pm IT_{12}}$	E_{max}	F_{max}	G_{max}
YEI 1-10 <i>d</i>	10	28	24	42	51	7	4.5
YEI 1-13 <i>d</i>	13	35	31	51	60	7	4.5
YEI 1-14 <i>d</i>	14	38	34	55	64	7	4.5
YEI 1-16 <i>d</i>	16	43	38	62	74	7	4.5
YEI 1-18 <i>d</i>	18	48	43	68	81	7	5.5
YEI 1-20 <i>d</i>	20	53	48	75	90	7	5.5
YEI 1-22 <i>c</i>	18	58	49	83	95	9	5.5
1-22 <i>d</i>	22		53				
1-22 <i>e</i>	28		59				
1-22 <i>f</i>	35		66				
YEI 1-25 <i>c</i>	20	66	55	93	105	9	6
1-25 <i>d</i>	25		60				
1-25 <i>e</i>	31		66				
1-25 <i>f</i>	40		75				

Note 1 — If a baseplate is required, dimension *B* will increase accordingly.

Note 2 — Where larger or smaller stack heights than the preferred values are required, the heights chosen should correspond to the requirements of 3, whilst the values C_{max} and D_3 should follow the relationship:

$$\begin{aligned} C_{max} &= S_{nom} + p \\ D_3 &= S_{nom} + q \end{aligned}$$

where *p* and *q* are constants readily determined from the tabulated figures. For example, for YEI 1-32 *d*,

$$\begin{aligned} 77 &= 32 + p \text{ whence } p = 45 \\ 57 &= 32 + q \text{ whence } q = 25 \end{aligned}$$

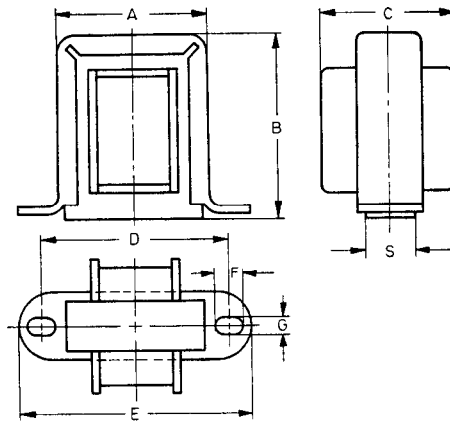


FIG. 2 U-CLAMP MOUNTING (BOBBIN IN VERTICAL ORIENTATION)

TABLE 2 U-CLAMP MOUNTING STYLE (BOBBIN IN VERTICAL ORIENTATION)

(Clause 4)

All dimensions in millimetres.

Code Designation	S_{nom}	A_{max}	B_{max}	C_{max}	$D_{\pm IT_{12}}$	E_{max}	F_{max}	G_{max}
YEI 1-10 <i>d</i>	10	32	33	24	42	51		
YEI 1-13 <i>d</i>	13	36	43	31	46	55		
YEI 1-14 <i>d</i>	14	39	45	34	49	58	7	4.5
YEI 1-16 <i>d</i>	16	45	52	38	55	67		
YEI 1-18 <i>d</i>	18	50	58	43	60	73		
YEI 1-20 <i>d</i>	20	55	64	48	65	80		
YEI 1-22 <i>c</i>	18	60	70	49	72	84	9	5.5
1-22 <i>d</i>	22			53				
1-22 <i>e</i>	28			59				
1-22 <i>f</i>	35			66				
YEI 1-25 <i>c</i>	20	68	79	55	81	93	9	6
1-25 <i>d</i>	25			60				
1-25 <i>e</i>	31			66				
1-25 <i>f</i>	40			75				

EXPLANATORY NOTE

The object of this series of standards is to standardize the outline dimensions of transformers and inductors for use in telecommunication and electronic equipment. This part covers transformers and inductors using YEI-1 laminations built for the three most commonly used forms of mounting style which are given in the following three sections:

Section 1 Universal mounting,

Section 2 U-clamp mounting, and

Section 3 Printed wiring board mounting.

This standard is based, without any technical change, on IEC document 51(CO)249, 'Draft specification for outline dimensions of transformers and inductors for use in telecommunication and electronic equipment : Part 1 Transformers and inductors using YEI-1 laminations' issued by the International Electrotechnical Commission (IEC).